CLINICAL IMAGES

An Elderly Man from Solukhumbu, Nepal, with a Rash

A previously healthy 83-year-old man with pruritic rashes on the forehead and scalp (Figures 1 and 2) was brought to us by helicopter medical evacuation from Solukhumbu District, Nepal. Solukhumbu District is a remote part of Nepal, a landlocked country of South Asia. The patient gave a history of the application of henna, a hair dye, 9 days earlier. The first symptoms were rashes in the postauricular area that appeared on the day he applied the dye. After a week, the rashes increased. He was brought to us because no specialist was available in the remote area. The patient was becoming anxious because local treatment with an

over-the-counter topical cream had produced no improvement.

On examination, the scalp, pinnae, and postauricular areas showed excoriation, with oozing of exudates from certain sites on the pinna and forehead. The remainder of the physical examination was normal. The patient had normal complete blood count, serum creatinine, glomerular filtration rate, and electrolytes.

What is the Diagnosis? How Should This Case Be Managed?

Figure 1. Pruritic rashes on forehead and scalp with excoriation and discharge of exudates.

Figure 2. Pruritic rash on pinna and postauricular area with excoriation and discharge of exudates.

DIAGNOSIS

A hair dye allergy, probably due to para-phenylenediamine allergy

BACKGROUND

This elderly man was diagnosed with an allergic contact dermatitis due to henna used in hair dye. Allergy to natural henna is not usual; however, the addition of para-phenylenediamine (PPD) to natural henna increases the risk of allergic contact dermatitis.¹ Mixing PPD with natural henna gives the henna an ebony color instead of its usual orange-reddish color. Adding PPD to natural henna also shortens the time needed for the coloring process.¹ Primarily, PPD is used as an ingredient in oxidative hair coloring products at a maximal concentration of 4%; after mixing it in a 1:1 ratio with hydrogen peroxide before use, the concentration is 2% at the time of application to the hair.

PATHOPHYSIOLOGY

High levels of PPD (6% or higher¹) may cause severe dermatitis, eye irritation, asthma, gastritis, renal failure, vertigo, tremors, convulsions, and even coma.² Eczematous contact dermatitis may result from long-term exposure.² Patients may present with obvious signs of allergic contact dermatitis, eczema, chemical burn, acute renal failure, acute and severe angioneurotic edema, abdominal pain, and vomiting.³

CLINICAL COURSE

The patient was treated with oral steroids and a topical corticosteroid for 1 week. He completely recovered after the 1-week treatment.

TREATMENT

For acute cases of hair dye dermatitis, the hair and scalp should be washed as soon as possible with a mild soap or soapless shampoo to remove the excess dye.⁴ A 2% hydrogen peroxide solution or compresses of potassium permanganate in a 1:5000 dilution should then be used to completely oxidize the PPD. To soften the crust and

avoid a tight feeling of the scalp, a wet dressing of cold olive oil and lime may be used.⁴ Further treatment with a topical application of an emulsion of water and water-miscible corticosteroid cream, or even oral corticosteroids, may be indicated for severe cases.⁴

People with an allergy to PPD should avoid the use of all oxidation-type hair dyes and should inform their hairdresser of the allergy.⁴ Semipermanent dyes can be considered as an alternative method.⁴ Patch testing should always be performed before use. In cases of occupational exposure, contact with PPD can be avoided by wearing nitrile gloves and protective sleeves.⁵

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